DOCUMENT RESUME

ED 061 048 SE 013 293

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TITLE Trends in Teacher Education, Number 15. Population Education and the School Curriculum.
INSTITUTION Phillipines Univ., Quezon City. Asian Inst. for Teacher Educators.
PUB DATE Jun 71
NOTE 13p.

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS *Curriculum Development; Demography; Educational Programs; *Elementary Grades; *Population Education; Population Growth; Population Trends; *Secondary Grades; Teacher Education

ABSTRACT

It is the endeavor of this paper to provide a broad perspective of the field of population education at the school level with the hope of encouraging teachers to use population-related materials and concepts in their teaching. Some implications of the population situation, the importance of population studies, and problems in introducing population education are all considered. Potential course content is viewed from a total perspective approach considering the broad areas of: (1) collection and analysis of population data, (2) population growth and human development, (3) problems of urbanization, (4) psycho-social aspects of human sexuality and the reproductive process, and (5) population planning. Emphasis throughout is on population education in Asian countries. (BL)

ED 061048

TRENDS
IN TEACHER EDUCATION

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Number 15 June 1971

Population Education and the School Curriculum

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SE 013 293

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POPULATION EDUCATION AND THE SCHOOL CURRICULUM

Some implications of the population situation

The implications of certain features of the population situation, as at present and as projected for the future in the countries of Asia and in the world as a whole, are such that the conclusion is irresistible that no social problem which concerns man — as an individual, as the member of a family, as the citizen of a country, and as a member of the world community — is of as much importance for the future of his existence as the problem, or the complex of problems, associated with the growth of population. A few of the more important implications may be summarized here.

1. Early this century, Charles Darwin, in his well-known classic, *The Origin of the Species,* made the following comment: "Even slow-breeding man has doubled in twenty-five years, and at this rate, in less than a thousand years, there would literally not be standing room for his progeny."[1] It is now realized that Charles Darwin made an underestimate, and that in a matter of six or six and a half centuries from now there would be less than one square foot per human being, less than standing room, in fact. Civilised life would be impossible then, and possibly even a century or two before then or, in other words, four or five centuries from now, which is indeed not a great deal of time ahead from the present. We need not, however, look that far to appreciate the gravity of the problem. A doubling of the present population of the world will require about 30 years from now, and each further doubling will require less and less time, if mortality rates decline and fertility rates remain at their present level.

2. In so far as Asia is concerned, it is the continent which exemplifies the problem of population in its most acute form. Asia has more than half the world's population, though the extent of land occupied by it is only one fifth of the total area of the earth. In spite of the most determined efforts of the nations concerned to develop their educational systems, the race against population growth has been a losing one. There are more illiterates, aged 15 years and above, in the Asian region now than there were twenty years ago; there are more children, aged 5 years to 19 years, out of school now than there were twenty years ago. Far from increasing current educational enrolment ratios, which are already too low, maintaining even these ratios in the future for the increasing population has become an up-hill task.

3. A rapid rate of population growth has served to limit investment, the capacity for economic growth and the potential rate of growth of average income, thereby reducing the pace of improvement of standards of living and the quality of human life.

4. The problems of urbanization loom large over all nations, both developed and underdeveloped. Shortages of housing, water supply and sanitation combine with water and air pollution to constitute grave hazards to human life in all thickly populated areas.

These features of the demographic situation have no doubt contributed in substantial measure to the malaise of crime, violence, conflict, etc., that is manifesting itself in myriad forms in all countries of the world. Its genesis may lie largely in the revolution in men's minds and actions that has sprung from the frustrations of modern life and the unfulfilled expectations of a better future that was hoped for but is found incapable of attainment.

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The importance of population studies

Clearly, from whatever angle we look at it, the rapid growth of population presents an issue of momentous significance for man, and no educational programme that makes any claim of relevance to human issues can ignore it. For some time past, a few educators have been forcefully arguing the case for the inclusion of population studies in the curriculum. In 1962, Warren S. Thompson wrote in the *Teachers College Record* as follows: "In regard to education, I assume that the purpose of formal education in a democratic society is to prepare our youth to cope more effectively with the increasingly complex problems of modern society in matters that come within the competence of the mass of citizens to decide. This can probably best be done by giving the student the facts needed to provide him with a basis for the intelligent consideration of social policies intimately and directly affecting him and his family. Such policies must be decided at the 'grass roots' if they are to become effective. Certainly, no basic policy aimed at controlling growth can be effective when imposed from above .... The presentation of the essential facts must, of course, be accompanied by as thorough and objective discussion as possible."[2] Writing in the same issue of the *Teachers College Record*, Philip M. Hauser lamented the fact that the heightened interest among various groups and agencies all over the world in population matters "has had relatively little impact on the school curriculum."[3] He went on to point out that the facts and implications of population changes were indeed "conspicuous by their absence or by their superficial and cursory treatment" in education, and argued that information about population should be regarded as an "essential part of a general education."[4] During the three- or four-year period immediately preceding 1970, a few attempts were made in South America, the United States, and India to introduce population materials into the curricula of a small number of schools in these countries. From 1970, however, Unesco has entered strongly into the field of population education. A workshop on Population Education, held in Bangkok in September 1970, broke new ground, and its Report is perhaps the most comprehensive statement available anywhere in the world on the field of population education.[5] The Workshop has served to stimulate a great deal of interest in the countries of the Asian region. Some of them have organised national workshops as a follow-up on the Bangkok seminar, and produced experimental materials for introduction into schools. Three Asian countries, apart from India, that have shown great initiative in this field are the Philippines, the Republic of Korea and the Republic of China.

A comment on terminology

While Warren S. Thompson and Philip M. Hauser were the first to urge the inclusion of population studies in the school curriculum, it was the task of other educators to give concrete shape to a programme. One of the pioneers in this field is Sloan Wayland, and it is to him that the term 'population education' appears to be owed.[6] He was interested in the introduction of population studies into the school curriculum, and he noted that the terms "sex education" and "family life education" which were in current use in the West before there was any concern about population studies had been used by some to encompass the new field. He was not in favour of the use of these terms as the substantive content and focus in the new field were different. Moreover, he thought it best to use a term which did not evoke "negative responses by educators and the public." For these reasons, he suggested the term "population education." His views on the content of the field were as follows: "... we are concerned about the inclusion in the formal educational system of instructional settings in which young people will come to understand the circumstances which have led to the adoption of family planning as public policy and to understand that for the family and the nation, family planning is possible and desirable. This would include an understanding of the relationship of population dynamics to economic and social development of the country and the implications of family size for the quality of life of the individual family." In a list of six basic topics given by him in another article,

Wayland includes "development of basic understanding of the process of human reproduction."[7] It will be seen therefore that certain elements of family life education and sex education are included in Wayland's concept of population education. Noel-David Burleson has used another term, namely "population awareness" in suggesting materials for inclusion in the school curriculum.[8] A narrower scope than that envisaged by Wayland appears to be implied in the use of the term population awareness. Thomas Poffenberger defines population awareness as "the communication of those aspects of population dynamics which indicate the significance of population growth in terms of its social, economic and political consequences for a given area."[9] Unesco appears to favour the term "population and family education," judging from the way in which the theme of the Bangkok Workshop of 1970 was titled. A difficulty in adopting this term is that in order to justify the use of the term the whole area of family relationships will have to be included, although much of it would have no relevance to population issues. In the circumstances, a great deal may be said for the adoption of Wayland's term "population education," including in the content such elements of family education and sex or reproduction education as are logically related to population issues.

The content of population education

In considering the potential content of population education, it is proposed to adopt the approach of looking at it in a total perspective that would bring within it whatever appears to be logically related to it. Five broad areas within which the content appears to fall may be demarcated.

A. *The collection and analysis of population data*

A detailed break up of the content under this head would be as follows: methods of collecting population data; the demographic processes of birth, death and migration; calculation of birth, death and growth rates; the age structure of a population and the causes underlying different kinds of age structures; determinants of fertility, morbidity and mortality; trends in population growth; refined indices of fertility and mortality.

B. *Population growth and human development*

At the macro-level of the nation, the topics to be considered would be the relationships between population growth and such variables as land and natural resources, agriculture, food, housing, employment, economic development, educational development and the development of health services.

At the micro-level of the family, the topics to be considered would be the impact of family size on the quality of life in the family and aspects of development of the individual.

C. *The problems of urbanization*

D. *Psycho-social aspects of human sexuality. The reproductive process.*

E. *Population planning*

The objective of a course such as that outlined above would be to give the learner an insight into the totality of issues connected with population, ranging from the nature, measurement, causes, determinants and consequences of population growth as well as of urbanization both at the micro-level of the family and at the macro-level of the community, the nation, or the world at large to the dynamics of the reproductive process, and finally to the possibilities of planning family size and population growth. Hopefully, the acquisition of such an insight may succeed in providing the learner with a sound cognitive and attitudinal basis that would contribute to rational decision-making, both as an individual and as a member of society, when occa-

sions for such decisions arise. An obvious situation in which a personal decision will be involved will arise many years later, in adulthood, when the learner would be faced with the process of decision-making in relation to reproductive behaviour, not in the insulated atmosphere of a classroom but in an emotionally charged socio-psychological context in which both individual urges and role expectations, as husband or wife, and as an adult member of a social group, would powerfully affect decision-making and action. While it would be idle to pretend that exposure to a course on population education would definitely ensure a decision that is productive of both individual and social good, it is reasonable to expect that the probability of a rational decision from a person who has had such educational experiences is much higher than from a person who has not had an orientation to population issues.

It has to be recognised that much of the current interest in population education has arisen from the need to reduce the rate of population growth in many parts of the world by encouraging in these areas the wide adoption of a small-family norm in the hope that reproductive behaviour would be in accordance with such a norm. The unmistakable specificity of this all-important long-term objective makes population education different from almost every other educational activity that is usually undertaken in our educational institutions. Educators are, however, agreed that the best educational preparation for the achievement of this objective is to promote the development of an insight into the impact of population growth on the quality of life by means of a programme that is untarnished by any kind of crude propagandist emphasis. Stephen Viederman says, "The aims of education are to increase awareness and, hopefully, to help us achieve wisdom in the conduct of our lives, both as individuals and collectively. These aims are shared by the new field that has come to be called population awareness education .... population education aims at developing informed individuals who will, as a result of the knowledge and understanding achieved through their education, make responsible decisions concerning their own reproductive behaviour. The key concept is responsible decision-making which involves fore knowledge and understanding of the consequences of one's actions. This is the beginning of wisdom, and represents the moral and ethical purpose of population education."[10]

Over and above any pragmatic objective related to the small-family norm or the limitation of population growth, population education, in the hands of an imaginative teacher sensitive to the analysis of dynamic relationships between interconnected variables opens up interesting possibilities of examining the interplay between such variables and sharpening the insights of students. Population growth is a function of, or in other words, is dependent on, the three processes of natality, migration and mortality, each of which is in turn dependent on a number of determinants. Differentials in the nature and magnitude of the determinants in so far as they affect different groups of people or nations produce variations in natality, migration and mortality and finally in the size of the population and its growth rate. The age structure of a population depends on the patterns of increases or decreases in natality, migration and mortality and affects them in turn. So does the sex structure of a population. The potential number of school entrants, the burden of dependency, the potential labour force and the number of women of child-bearing age also depend on the age structure. A change in the age structure would affect all of them. Economic growth depends on a number of variables such as savings, the size of the labour force, availability of land, etc., all of which are dependent in one sense or another on population growth. Examples of this dynamic interplay of variables encountered in the study of the nature and impact of population growth can be multiplied almost without limit. The exploration of such issues is without doubt a valuable and challenging intellectual activity that could lead to a deep appreciation of the relationships between man and his multifaceted environment. Even such a mundane affair as the calculation and interpretation of population indices can lead to a heightened sensitivity to the meaning and significance of numerical relationships. Discussions of the basic weakness of crude birth rates and death rates and the dangers involved in generalizing from them would lead to the development of a critical

attitude towards numerical relationships. An understanding of standardization as a method of ensuring comparability, and of the calculation of age-specific fertility and mortality rates, standardized rates and reproduction rates as a method of obtaining more and more refined measures to describe phenomena, will provide an effective illustration of the purposive activity of the human mind in its search for more and more meaningful ways of comprehending the processes that go on around him. It will be seen from these examples of the educational possibilities of population studies that, in the hands of a knowledgeable and imaginative teacher, population education could have distinctive educational uses to warrant its inclusion in the school curriculum, apart from any pragmatic purposes that may be achievable in the long run, and for which a sound cognitive and attitudinal basis may be laid in school.

Some problems in introducing population education

In connexion with the introduction of population education into the school curriculum, note will have to be taken of

a) the views of parents regarding the advisability or the appropriateness of including certain topics;

b) the preparation of teachers to handle population education;

c) the age levels at which different topics should be introduced and the key concepts to be emphasized at each age level;

d) the subject matter areas through which the topics, and the key concepts involved in them, could be introduced;

e) the lack of relevant research data, especially on the motivational issues.

a) It is possible to distinguish within the field of population education certain topics which are non-controversial, the presentation of which to children would be readily accepted by all parents, and certain other topics about which parents may have reservations. Any attempt to thrust on the school elements about which parents have reservations would be to endanger the entire programme of population education. Where some elements in the proposed programme do not meet with the approval of parents, the best policy would be to act in accordance with parental wishes and to accept the position that children would derive benefit even if they are exposed only to the remaining part of the programme. What may be desirable or feasible in one country may not be desirable or feasible at all in another, and the need is to adopt a strictly pragmatic approach that is sensitive to social pressures. A topic that may create a certain amount of difficulty is that relating to sexuality. It is not only in the Asian countries that this topic could present difficulties. Thomas Poffenberger says, "... the introduction of sex education and family life education programs and their continuation, has not always been smooth either in the United States or in European countries, and in the last few years parental opposition and vested interest group opposition seem to have increased. In Sweden which has had one of the most active sex education programs in Europe, a review of school policies has been undertaken. In the United States, there has been growing opposition to sex education programs in the last year or so."[11] Poffenberger also refers to a developing country (not mentioned by name) in which "the wide publicity given the program before any planning and the use of the term 'sex education' had increased the difficulty of adding any population material to the curriculum." This situation shows the dangers involved in trying to include material that may not be favoured by parents. The moral for curriculum planners is to develop a sensitivity to parental opinion and public opinon, and to go ahead with such parts of the programme as are acceptable to parents and which would achieve the objective of the programme even partially though not wholly. Several writers on population education have been careful to stress such a point of view.

Harold Howe writes as follows: "Population education is not family planning or birth control education although these topics are related and relevant. Population education is merely instruction in the dynamics of population without the emotionally charged areas of sex, birth control and family planning. The consequences of a rapidly growing population can be taught in an objective, non-sectarian manner without examining areas likely to raise governmental and parental opposition or to create discomfort among instructors. The content of population education is more palatable or less controversial for both the teacher and the taught than birth control and family planning concepts. It is geared to the creation of a desire for information about these fields but with a more proper understanding of their function than has usually been encouraged before: it seeks to implant an understanding that a planned, small family is desirable if national and personal development are to be possible."[12] Edward W. Pohlman and K. Seshagiri Rao argue that while an understanding of sex gives a more complete picture to population education, it is not essential and that "one can teach about (1) population dynamics and the problems of overpopulation, (2) advantages of small families and (3) advantages of later marriage without discussing sex or contraception in any way."[13] They point out that the "population crisis is a matter of life-or-death urgency" and as such demands priority. They do not want to risk population education being involved in controversies about sex or contraception education, for they feel that parents and community leaders "who would accept population education alone will block any efforts to teach a combined programme." To cut a long story short, the trend of thinking among many educators is that population education is of such vital importance, even in dissociation from sex education and family education, that the surest way of ensuring its acceptance in the school curriculum is to concede this dissociation both in theory and practice. None of them would oppose sex and family planning education, if the community of parents and teachers wanted them; if they are included, perhaps population education would be complete in all its elements. But if communities are wary about sex and family planning education, let this not stand in the way of the introduction of a population education which is, using the words of Pohlman and Rao, "clearly and loudly divorced from sex education, family life education and contraception education."

Another issue that could raise complications is a propagandist emphasis on the small-family norm. To be sure, the acceptance in word and deed of a small-family norm is essential in the case of the people living in many parts of the world, and especially the underdeveloped countries of Asia, if population education is to achieve one of its most important purposes, but this acceptance must come at a mature level of understanding on the basis of an intellectual appreciation of the advantages of a small-family norm from the point of view of both the individual and the community at large. Any attempt to press home the small-family norm prematurely at a simplistic level, without allowing the norm to crystallize as a result of an increasing awareness of its advantages, may result in disturbed interpersonal relationships within the child's own family constellation, if the manifest norm in it is that of the large family. In a talk delivered at a national seminar on population education held in Bombay in 1969, Dr. V.K.R.V. Rao, the Union Minister of Education and Youth Services of the government of India pointed out the danger of creating in children "feelings of disaffection for their parents and hatred for brothers or sisters in case they constitute a large family."[14] Apart from this danger, which could be quite real, there is the possibility that if population education is perceived to be both propagandist and out of tune with an accepted norm it is likely to be resisted. Research on communication carried out by C.I. Hovland, I.L. Janis and H.H. Kelly shows that communications which are regarded as instructional rather than persuasive are more readily accepted.[15] One characteristic of an instructional communication is that conclusions are incontrovertible and likely to be socially rewarded in accordance with the norms of people important to those receiving the communication. Where there is a disjunction between the message of the communication and the norms of the persons important to those receiving the communication, the message is likely to

be resisted. Hovland, Janis and Kelly point out that "to the extent that the latter conditions prevail, it is always an open question whether the effort is warranted." The moral from this is to desist from giving population education a propagandist flavour and to present the facts as objectively as possible at the learner's level of understanding, leaving it to the facts themselves to throw up in course of time the essential lesson to be learned from them. It is by this means that the possibility of rejection, arising from dissonance with existing norms, can be minimized. The importance of a subtlety of approach that eschews propaganda cannot be overemphasized, if population education at the school level in the developing countries is to achieve its long-term objective of encouraging the acceptance of a small-family norm.

b) An important prerequisite before a successful programme of population education can be launched is the availability of teachers. The urgency of introducing population education is, however, such that much valuable time may be lost if we wait until fully prepared teachers are available. The need arises therefore to draw up short-term plans for getting programmes going with such introductory courses for teachers as are feasible, and long-term plans for a more comprehensive preparation of teachers. Sloan Wayland is of the view that "concentrated work for three to six months should be enough time for an experienced educator to develop a high enough level of competence to provide leadership" in developing programmes in the field of population education.[16] The teacher's preparation should be comprehensive, and it should include all the elements of population education so that the teacher would be able to handle population education materials with accuracy and confidence. Though the subject matter of population education is of an interdisciplinary nature, it is not intrinsically difficult, and in so far as the teacher is concerned a single unified course would probably meet his needs, provided he engages in a dedicated effort on his own to keep in touch with relevant literature in the field and progressively acquire mastery over the field. Any temptation to entrust the subject to very inadequately prepared teachers should be resisted, for it could yield more harm than good. Some statements in Gilbert Highet's *The Art of Teaching*, are of interest in connexion with the teacher's preparation and task. " . . . One cannot understand even the rudiments of an important subject without knowing its higher levels—at least, not well enough to teach it. Every day the grossest and most painful blunders are made . . . by teachers . . . because they confidently state a half-truth which they have read in an encyclopedia article, or because they lay down as gospel a conjecture once uttered by an authority they admired. And many teachers, trying to explain certain problems in their own subject, fall into explanations suggested to them by a colleague or thrown up by their own imagination, which are nevertheless totally wrong, and which an extending knowledge of the field would have corrected long ago. . . . It is simply useless to teach a child even the elements of a subject, without being prepared to answer his questions about the upper ranges and the inner depths of the subject . . . . A limited field of material stirs very few imaginations. It can be learnt off by heart, but seldom creatively understood and never loved. A subject that carries the mind in limitless journeys will, if it is well taught, make the learner eager to master all the preliminary essentials and press on."[17]

India and the Philippines seem to be the only two countries in Asia which have made some sort of a start in the preparation of teachers of population education. In both countries, a number of short workshops have been conducted for teachers during the past one or two years, and several are scheduled for 1971. In so far as universities are concerned, the Faculty of Education and Psychology of the M.S. University of Baroda in India has established a Population Education Centre. This centre is trying out a course of extension lectures on population education with its Bachelor of Education students. A few post-graduate students of the university have commenced work on research studies in the area of population education. In the Philippines, the Philippine Women's University in Manila and the Wesleyan College, Cabanatuan City, have initiated courses in the field of population education. The Unesco-sponsored Asian Institute for Teacher Educators located in the University of the Philippines has cooperated with the Bureau of

Public Schools at a three-week seminar on population education for Filipino educators, and also provided an introductory course on population education for 21 key teacher educators of the Asian region enrolled in it for a three-month course of studies. It is hoped that many of them will take the initiative in developing courses on population education in the teachers' colleges in their own countries. In India, the Indian Association of Teacher Educators has already made an appeal to the teachers' colleges of the country to conduct extension lectures for teacher trainees to orient them in the concepts and methods of population education. In a matter of months, or at any rate within a couple of years, the demand for such courses is likely to be widespread in all the countries of the Asian region. The Bangkok Workshop of 1970 "emphasized the high priority that needs to be given to the adequate in- and pre-service preparation of teachers if the implementation of a Population Education Programme" is to succeed, and made a number of recommendations to be implemented at the national level and at the international level.[18]

c) There has been a certain amount of controversy as to the age levels or school levels at which materials on population education should be introduced. The arguments for introducing population education at the elementary or primary school level are as follows:

1. The highest enrolments in education are in the elementary or primary grades, and population education should be introduced in these grades to enable the largest number of children to be reached. Children drop out of the elementary or primary school as they go up the school, and the number of pupils joining secondary schools is only a small fraction of those who were in the early grades of the elementary or primary school. If the introduction of population education is postponed until the secondary level, many will not get it at all in school. Their chances of acquiring information about population matters out of school are also limited, as many of them would not have attained a high standard of literacy. Moreover, in the villages in which they are more likely than secondary school leavers to reside, opportunities of exposure to the mass media are restricted. In view of the wider prevalence of large-family norms among rural folk than among town folk, the need to canvass the rural folk is very great, and it is by the inclusion of population education in the elementary or primary school curriculum that this objective can be achieved.

2. The elementary or primary school curriculum usually provides a great deal of flexibility for the introduction of new materials. In very many countries, there is no great concern with examinations at this stage, and therefore the constraints on the use of experimental materials are relatively few.

There is great substance in these arguments but their limitations should be understood. If the intention is to reach the largest possible number of children, then population education should be introduced in the lower grades of the elementary or primary school. The development of materials at a relatively simple level of intellectual sophistication is no easy task, and there is a certain danger that the concepts in population education that are to be introduced may undergo a considerable oversimplication in the process. Moreover, the earlier a child is introduced to population education the greater will be the distance in time between his exposure to the programme and his decision-making processes in relation to population. What evidence do we have that such early exposure, without any exposure at all during the intervening period, would affect decision-making and reproductive behaviour fifteen to twenty years later? If our objective in introducing population education at the elementary or primary school level is limited to making children conversant with simple population data and with population growth as an issue that touches human life and society at a number of points, it should be possible to give such an awareness without necessarily claiming a successful inculcation of the small-family norm and decision-making many years later in accordance with it. In other words, modest objectives that prepare the ground for the attainment later of larger objectives may be achievable at the elementary

or primary level. It would be realistic to admit that both those who are exposed to the programme in the elementary or primary school, and those who are not exposed to the programme as they have dropped out of school would need exposure to population education in their middle and late adolescence, if their reproductive behaviour is to be influenced. Such exposure will have to be provided through programmes in secondary and tertiary level institutions for those adolescents attending them, and through out-of-school youth and adult education programmes for the others. Naturally, in the case of the latter, the emphasis could be placed more markedly on the small-family norm and on family planning than on other issues related to population growth. If this argument is accepted, its moral for the introduction of population education materials at the elementary or primary level is that every natural opportunity for introducing population-related materials should be availed of by the teacher, with due regard to the cognitive development of the pupils. There should be no straining to inject material artificially, especially material of a kind for which the justification lies in the hope that it would bear fruit fifteen to twenty years later. It is especially important that teachers introducing population education at the elementary or primary school level should bear in mind V.K.R.V. Rao's caution, quoted earlier, against creating in children feelings of disaffection towards their parents and siblings. While this caution is not unnecessary at the secondary school level, it is in respect of the elementary or primary school child that it has to be strongly emphasized for two reasons. Firstly, the child is more pliable emotionally and less able to see situations in a total perspective. Secondly, if the subject of family size is presented at all at this stage, it is likely to be presented in an oversimplified manner that could sow the seeds of disaffection.

The arguments urged for the introduction of population education at the secondary level are as follows:

1. Curricular materials are easier to prepare for the secondary level than for the elementary or primary level. This is so as secondary pupils have a broader experience than elementary or primary pupils. Being older and more mature, they would be able to appreciate in some depth the relationships between population growth and other variables. Opportunities for the introduction of population education materials will be available in a number of subjects of the secondary curriculum.

2. In view of the fact that secondary level enrolments are low, the number of teachers required for introducing population education would be smaller than the number of teachers required for introducing population education at the elementary or primary level.

3. As secondary pupils are only a handful of years away from the time when they would make decisions regarding marriage and reproduction, a programme of population education would be full of meaning to them and may make an impact on their decision-making processes in these areas.

Little doubt exists about the appropriateness of population education for pupils at the secondary level. Even if students have been exposed to relatively simple programmes of population education at the elementary or primary level, the secondary level would sharpen whatever insights they have gained. Moreover, certain issues that may have been mentioned only incidentally at the elementary or primary level can be emphasized. It should, for example, be possible to discuss with secondary pupils in a comprehensive manner the factors that have led the people in many societies to adopt a large-family norm, examine the appropriateness of such a norm in the context of the world of today, and attempt to inculcate in the pupils the ideal of a small-family norm.

d) While a single unified course on population education may be the best means through which teachers of population education may be prepared, in the case of children at the elementary or primary level, it is perhaps out of the question trying to introduce population education

as a distinct subject. The approach should be to introduce population-related materials through such subjects as literature, history, geography, social studies, mathematics, general science and health education. This should be the approach with secondary pupils, too, in the first few years of their course at least, but a wider range of subjects than at the elementary or primary level, namely such additional subjects as biology and economics, would be available and make treatment in depth possible. With pupils in the last year or the penultimate year of secondary school, there may be a case for providing a short, unified course, say, of one hour's duration a week for about ten weeks, to consolidate and integrate the knowledge and insights the pupils have gained into the problems of population growth through their exposure to population-related materials in the subjects they have studied during the previous five or six years. A short course of this nature is unlikely to be regarded as a burden on the curriculum, and it should be possible to accommodate it without difficulty in the school time table. Apart from the advantage in drawing together and integrating ideas and concepts in population education that have been acquired over the years through the different subjects of the curriculum, the inclusion of a subject designated 'population education' in the final or the penultimate year of the secondary school would give a certain independent status to this field of study. At this juncture in the development of population studies, the acquisition of such a status may well make it a talking point among parents and the general public, and give the subject an importance that would be conducive to its further development.

The introduction of population-related materials into the various curricular areas assumes that syllabuses of study in these curricular areas have a flexibility that permits such a procedure. If, on the contrary, there is no such flexibility, the task of the teacher would be made all the more difficult and it would require a great deal of ingenuity on his part. It is important to ensure that the introduction of population-related material takes the form of a natural integration with other content rather than a straining of such content to accommodate the materials in an artificial or unnatural manner. When occasion arises for syllabus revisions, as is usually the case every two or three years in most school systems, full use should be made of the opportunity to open up possibilities of introducing population-related material at appropriate points.

As a practical measure, it is useful to identify the concepts that should be introduced in population education, and to examine each concept carefully with a view to determining the curricular area or areas through which it could be introduced and the depth at which it may be introduced at each possible level.

e) The effective inculcation of the small-family norm requires among other factors an understanding of the motivational basis underlying the large-family norm in different socio-cultural groups. Research done so far to unravel this motivational basis is quite inadequate, and a great deal of further work is needed. The generally available research findings are based on responses to questionnaires that have been administered in connection with K.A.P. (Knowledge — Attitude — Practice) surveys. Their response validity, especially on motivational issues, is greatly to be doubted. This is borne out by the fact that findings from questionnaire studies are seen to be not supported when interviewing in depth is undertaken. The latter has so far been done only on a small scale on account of the shortage of personnel to undertake such studies. Teachers who are interested and prepared to undergo suitable training could prove quite active researchers in this field, and help in gathering data about the motivational basis underlying the large-family norm and the barriers to the inculcation of a small-family norm and the acceptance of family planning. Every socio-cultural group has its particular ethos surrounding these issues, and population education as well as family planning propaganda should take account of it, if success beyond a certain point is to be achieved. Some success will be achieved even through a general programme that ignores specific motivational factors, but this is an illusory kind of success. For success beyond a certain point, the hard core of non-acceptors of the small-family norm and family planning has to be satisfactorily tackled, and for this purpose a clear understanding

of motivational issues is required. It may be because of the neglect of this factor that in India during the past two or three years a plateau has been reached in the number of acceptors, in spite of an increasing deployment of personnel and money. The involvement of teachers as population educators makes available a leadership of great potential for participation in population activities, and many new dimensions may be added to programmes as a result of their leadership.

Conclusion

It has been the endeavour of this paper to provide a broad perspective of the field of population education at the school level in the hope that teachers who are not yet acquainted with the field would begin to take an interest in it and make an attempt to introduce population-related materials and concepts when opportunities arise in the course of their teaching. While this paper has not been concerned with the introduction of population education to out-of-school youth and adults, the possibilities of doing so should be actively borne in mind as they are either on the threshold or in the midst of their reproductive behaviour, and constitute an important target group, the modification of whose family norms and reproductive behaviour could bring immediate results from the point of view of inducing a slow rate of population growth.

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